Amendments to the Claims

Listing of Current Claims

1. (currently amended) A process for the production of a precursor material for use in the preparation of stabilized alumina catalyst support material, which process comprises the steps of:

(a) providing a substantially homogeneous mixture comprising aluminum and barium containing compounds by homogeneous precipitation of said aluminum and barium containing components whereby said mixture is in the form of a substantially homogeneous precipitate; and

(b) heating the mixture under conditions to form particles of boehmite at least partially coated with a layer comprising a compound of barium.

2. (original) A process as claimed in claim 1, wherein the layer formed on the particles of boehmite comprises barium carbonate.

3. (previously presented) A process as claimed in claim 1, wherein the aluminum containing compound comprises aluminum chloride, aluminum nitrate, aluminum sulphate, alumina and/or boehmite.

4. (previously presented) A process as claimed in claim 1, wherein the barium containing compound comprises barium chloride, barium sulphate and/or barium nitrate.

5. (canceled)

6. (currently amended) A process as claimed in claim ~~5~~ 1, wherein the substantially homogeneous precipitate is formed by a process involving homogeneous precipitation of aluminum and barium containing compounds from salt solution.

7. (original) A process as claimed in claim 6, wherein the homogeneous precipitation involves generating a base within the salt solution through thermal decomposition of a water-soluble reagent.

8. (original) A process as claimed in claim 7, wherein the water-soluble reagent comprises urea and/or hexamethylene tetramine.

9. (previously presented) A process as claimed in claim 6, wherein the salt solution further includes a dispersant, such as polyvinylpyrrolidone.

10. (previously presented) A process as claimed in claim 1, wherein the mixture in step (a) is formed by adding a solution comprising oxalic acid and a water soluble barium compound, preferably barium nitrate, to an aqueous slurry comprising boehmite.

11. (previously presented) A process as claimed in claim 1, wherein heating of the mixture in step (b) is achieved by a hydrothermal process.

12. (original) A process as claimed in claim 11, wherein the hydrothermal treatment is carried out at a temperature in the range of from 90 to 300°C, more

preferably from 100 to 220°C.

13. (previously presented) A process as claimed in claim 11, wherein the hydrothermal treatment is carried out at a pressure in the range of from 1 to 150 bar, preferably from 5 to 50 bar.

14. (previously presented) A process as claimed in claim 11, wherein the hydrothermal treatment is carried out for a time in the range of from 30 minutes to 25 hours, preferably from 1 to 10 hours.

15. (previously presented) A process as claimed in claim 1, wherein the mixture in step (b) is heated at a temperature in the range of from ambient temperature to boiling temperature, preferably by a reflux process.

16. (withdrawn) A process for the preparation of a stabilized alumina catalyst support material, which process comprises the steps of:

(i) providing a precursor material comprising particles of boehmite at least partially coated with a layer comprising a compound of barium, wherein the precursor material is produced according to a process as claimed in claim 1; and

(ii) heating the coated particles of boehmite to a temperature at which least some of the boehmite transforms to gamma-alumina.

17. (withdrawn) A process as claimed in claim 16, comprising the step of further heating whereby at least some of the gamma-alumina transforms to theta and/or delta-alumina.

18. (withdrawn) A process for the preparation of an automotive catalytic converter, which process comprises the steps of:

(i) providing a precursor material comprising particles of boehmite at least partially coated with a layer comprising a compound of barium, wherein the precursor material is produced according to a process as claimed in claim 1;

(ii) dispersing a mixture comprising said precursor material on a metal or ceramic monolithic substrate; and

(iii) heating said mixture comprising said precursor material to a temperature at which at least some of the boehmite transforms to gamma-alumina.

19. (withdrawn) A process as claimed in claim 18, comprising the step of further heating whereby at least some of the gamma-alumina transforms to theta and/or delta-alumina.

20. (withdrawn) A process as claimed in claim 16, wherein heating is carried out at a temperature in the range of from 500 to 1000°C.

21. (withdrawn) A process as claimed in claim 17, wherein the further heating is carried out at a temperature in the range of from 1000 to 1400°C.

22. (withdrawn) A process for the preparation of a catalyst, such as an automotive catalytic converter, which process comprises the step of dispersing a stabilized alumina catalyst support material prepared according to the process of claim 16 on a metal or ceramic monolithic substrate.

23. (original) A precursor material for the use in the preparation of catalyst

support material, which precursor material comprises particles of boehmite and/or transition alumina substantially completely coated with a layer comprising barium carbonate, barium oxide and/or barium aluminate.

24. (original) A precursor material as claimed in claim 23 provided in the form of a slurry or washcoat.

25. (withdrawn) A stabilized alumina catalyst support material which withstands substantial degradation to alpha-alumina after exposure to a temperature of approximately 1400°C for 1 hour and which comprises particles of gamma, theta and/or delta-alumina substantially completely coated with a layer comprising barium carbonate, barium oxide and/or barium aluminate.

26. (withdrawn) A stabilized alumina catalyst carrier or support material as claimed in claim 25 having a specific area of at least 20 m^2/g after exposure to a temperature of 1400°C for 1 hour.

27. (withdrawn) A stabilized alumina catalyst carrier or support material as claimed in claim 25 having a specific surface area of at least 31 m^2/g after exposure to a temperature of 1400°C 1 hour.